IN THE CLAIMS

Claims 1-20 (cancelled)

21. (Currently Amended) A ~~negative pressure~~vacuum ~~attraction~~pick and place device ~~characterized by~~ comprising:

~~an~~a ~~attraction~~pick and place nozzle which includes ~~an attracting~~a lifting portion having an air suction port and sucks in air from the air suction port to ~~attract~~ lift a part to said ~~attracting~~lifting portion;

a ~~negative pressure~~vacuum-supply unit which supplies a ~~negative pressure~~vacuum-for suction to said ~~attraction~~pick and place nozzle;

and ~~an~~a ~~attraction~~pick and place confirming sensor which measures a flow rate of air sucked in from the air suction port, and outputs an electrical signal indicating presence or absence of a part ~~attracted~~ lifted to said ~~attracting~~lifting portion on the basis of the measured flow rate.

22. (Currently Amended) A ~~negative pressure~~vacuum ~~attraction~~pick and place device according to claim 21, ~~characterized in that~~ wherein said ~~attraction~~pick and place confirming sensor includes

a base arranged in a gas channel,

a heater formed as a thin film on a surface of said base,

a plurality of temperature sensors formed as thin films on said surface of said base and,

detection means for measuring a gas flow rate on the basis of a temperature distribution in the vicinity of said heater which is measured by said temperature sensors.

23. (Currently Amended) A ~~negative pressure~~vacuum ~~attraction~~pick and place device according to claim 21, ~~characterized by~~ further comprising:

a valve which controls suction of air from said ~~attraction~~pick and place nozzle using the ~~negative pressure~~vacuum, and

an air suction passage which connects said ~~attraction~~pick and place nozzle, ~~attraction~~pick and place confirming sensor, valve, and ~~negative pressure~~vacuum supply unit to each other.

24. (Currently Amended) A ~~negative pressure~~vacuum ~~attraction~~pick and place device according to claim 23, ~~characterized in that~~wherein said ~~attraction~~pick and place confirming sensor includes

a flow sensor which detects a change in flow rate of air measured in said air suction passage between said valve and ~~attraction~~pick and place nozzle, and

detection means for outputting an electrical signal indicating the presence or absence of a part ~~attracted~~ lifted to said ~~attracting~~lifting portion on the basis of an output from said flow sensor.

25. (Currently Amended) A ~~negative pressure~~vacuum ~~attraction~~pick and place device according to claim 24, ~~characterized in that~~wherein said flow sensor detects a change in flow rate of air measured in a portion of said air suction passage which is in the vicinity of said ~~attraction~~pick and place nozzle.

26. (Currently Amended) A ~~negative pressure~~vacuum ~~attraction~~pick and place device according to claim 21, ~~characterized in that~~wherein said ~~attraction~~pick and place nozzle includes a plurality of ~~attraction~~pick and place nozzles which suck in air through the air suction ports by sharing the ~~negative pressure~~vacuum, so as to ~~attract~~ lift different parts, and said ~~attraction~~pick and place confirming sensor is provided for each of said ~~attraction~~pick and place nozzles.

27. (Currently Amended) A ~~negative pressure~~vacuum ~~attraction~~pick and place device according to claim 21, wherein~~characterized in that~~ said ~~attraction~~pick and place nozzle includes an air suction port which is provided to one open end and through which air is sucked in.

28. (Currently Amended) A ~~negative pressure~~vacuum ~~attraction~~pick and place device according to claim 27, wherein~~characterized in that~~ said ~~attraction~~pick and place nozzle further includes an air suction hole in which a flow speed of air sucked in through the air suction port by the ~~negative pressure~~vacuum becomes a sonic speed.

29. (Currently Amended) A ~~negative pressure~~vacuum ~~attraction~~pick and place device according to claim 27, wherein~~characterized in that~~ said ~~attraction~~pick and place nozzle further includes an air suction hole which has a channel sectional area with such a size that a flow speed of air sucked in through the air suction port by the ~~negative pressure~~vacuum becomes a sonic speed and in which an opening area of the air suction port changes in accordance with a state of a part ~~attracted~~ lifted to said ~~attracting~~lifting portion.

30. (Currently Amended) A ~~negative pressure~~vacuum ~~attraction~~pick and place device according to claim 21, wherein~~characterized in that~~

said ~~attraction~~pick and place nozzle further includes an air suction hole which opens to the air suction port and guides air, sucked in through the air suction port, to a nozzle inner chamber of said ~~attraction~~pick and place nozzle connected to and in contact with said ~~negative pressure~~vacuum supply unit, and

said ~~negative pressure~~vacuum supply unit generates a ~~negative pressure~~vacuum with which a pressure at an upstream end of the air suction hole is ~~substantially not less than~~at least approximately twice a pressure at a downstream end.

31. (Currently Amended) ~~An~~A ~~attraction~~pick and place confirming sensor ~~characterized by~~ comprising:

a flow sensor which, when a part is to be ~~attracted~~ lifted to an air suction port of ~~an~~a ~~attraction~~pick and place nozzle, measures a flow rate of air sucked in through the air suction port; and

detection means for outputting an electrical signal indicating presence or absence of a part ~~attracted~~ lifted to said ~~attracting~~lifting portion on the basis of an output from said flow sensor.

32. (Currently Amended) An ~~attraction~~pick and place confirming sensor according to claim 31, ~~characterized in that~~ wherein said flow sensor includes

a base arranged in a gas channel,

a heater formed as a thin film on a surface of said base, and

a temperature sensor formed as a thin film on said surface of said base, and

said detection means measures a gas flow rate on the basis of a temperature distribution in the vicinity of said heater which is measured by said temperature sensor.

33. (Currently Amended) An ~~attraction~~pick and place confirming sensor according to claim 31, ~~characterized in that~~ wherein said detection means outputs an electrical signal indicating presence or absence of a part ~~attracted~~ lifted to the ~~attracting~~lifting portion of said ~~attraction~~pick and place nozzle on the basis of a change in flow rate of air measured in an air suction passage between said ~~attraction~~pick and place nozzle and a valve which controls suction of air from the ~~attraction~~pick and place nozzle of a ~~negative pressure~~vacuum ~~attraction~~pick and place device.

34. (Currently Amended) ~~An~~A ~~attraction~~pick and place confirming sensor according to claim 33, ~~characterized in that~~ wherein said detection means outputs an electrical signal indicating presence or absence of a part ~~attracted~~ lifted to said ~~attracting~~lifting portion on the basis of a change in flow rate of air measured in a portion of said air suction passage which is in the vicinity of said ~~attraction~~pick and place nozzle.

35. (Currently Amended) ~~An~~A ~~attraction~~pick and place confirming sensor according to claim 31wherein~~, characterized in that~~ said detection means outputs an electrical signal indicating presence or absence of a part ~~attracted~~ lifted to the air suction port on the basis of a change in flow rate of air sucked in through an air suction hole which includes an air suction port of ~~an~~a ~~attraction~~pick and place nozzle of a ~~negative pressure~~vacuum ~~attraction~~pick and place device as one open end, and in which a flow speed of air sucked in through the air suction port becomes a sonic speed.

36. (Currently Amended ) ~~An~~A ~~attraction~~pick and place confirming sensor according to claim 31, wherein~~characterized in that~~ said detection means outputs an electrical signal indicating presence or absence of a part ~~attracted~~ lifted to the air suction port on the basis of a change in flow rate of air sucked in through an air suction hole which includes an air suction port of ~~an~~a ~~attraction~~pick and place nozzle of a ~~negative pressure~~vacuum ~~attraction~~pick and place device as one open end and has a channel sectional area with such a size that a flow speed of air sucked in through the air suction port becomes a sonic speed, and in which an opening area of the air suction port changes in accordance with a state of a part ~~attracted~~ lifted to said ~~attracting~~lifting portion of said ~~attraction~~pick and place nozzle.

37. (Currently Amended ) ~~An~~A ~~attraction~~pick and place confirming sensor according to claim 33, ~~characterized by~~ further comprising a connector to be connected to said air suction passage.

38. (Currently Amended) ~~An~~A ~~attraction~~pick and place confirming sensor according to claim 31, ~~characterized by~~ further comprising a board which mounts and holds said flow sensor thereon and which forms a wall of a channel.

39. (Currently Amended) ~~An~~A ~~attraction~~pick and place confirming sensor according to claim 32, whereine~~characterized in that~~ said temperature sensor includes an upstream temperature sensor arranged on an upstream side of a gas flowing direction, a downstream temperature sensor arranged on a downstream side, and an ambient temperature sensor arranged near the upstream side of said base.

40. (Currently Amended) ~~An~~A ~~attraction~~pick and place confirming sensor according to claim 32, whereine~~characterized in that~~ said base has a cavity at a central portion thereof, and a diaphragm which thermally insulates said temperature sensor and base from each other is further provided on the cavity.